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## Does extra feed affect breeding affect litter size?

### Abstract

Fertility was evaluated in sows fed 4 vs 10 lb/d and gilts fed 4 vs 7.4 lb/d during the first 10 days after breeding. No effects on farrowing rate or litter traits were detected. This confirms results of a previous KSU experiment. Therefore, high feed intake after breeding may not affect fertility traits.; Swine Day, Manhattan, KS, November 21. 1991

### Keywords

Swine day, 1991; Kansas Agricultural Experiment Station contribution; no. 92-193-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 641; Swine; Sows; Intake; Reproductive performance; Gestation

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## DOES EXTRA FEED AFTER BREEDING AFFECT LITTER SIZE?

*D. L. Davis*

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### Summary

Fertility was evaluated in sows fed 4 vs 10 lb/d and gilts fed 4 vs 7.4 lb/d during the first 10 days after breeding. No effects on farrowing rate or litter traits were detected. This confirms results of a previous KSU experiment. Therefore, high feed intake after breeding may not affect fertility traits.

(Key Words: Sows, Intake, Reproductive Performance, Gestation.)

### Introduction

It is generally believed that high feed intake during the period immediately after breeding is detrimental for embryo survival. We initially undertook studies to determine the nature of the problems(s) created by high feed intake, so that methods could be developed to prevent negative effects on embryo survival. However, we did not detect any effects of postbreeding feeding level on litter size (Swine Day Report of Progress, 1988, p. 22). Therefore the two experiments in this report were conducted to retest the hypothesis that higher than generally recommended amounts of feed during the first 10 d after breeding adversely affect fertility.

### Procedures

Crossbred primiparous sows (Yorkshire × Hampshire × Chester White) and gilts (Yorkshire × Duroc × Hampshire) were checked once/d for estrus and inseminated artificially (AI) with semen from Duroc (sows) or Hampshire × Chester White (gilts) boars. All females were inseminated on the first and

second days of estrus with semen from two or more boars. Sows came into estrus 4 to 15 d postweaning, and gilts were 7 to 8 mo old at AI. All females were placed in gestation stalls at estrus and fed individually once/d.

Experiment 1 included 27 sows that were assigned at estrus to be fed either 4 or 10 lb of a standard gestation diet. Experiment 2 included 79 gilts fed either 4 or 7.4 lb/d. In both experiments, the treatments began at first detected estrus and continued for 10 d. After d 10, all females were fed 4 lb/d of the same diet for the remainder of gestation. Approximately 30 d after AI, females were checked for pregnancy using ultrasound, and pregnant females were moved to outside lots where they were individually fed once/d for the remainder of gestation.

### Results and Discussion

Similar fertility was observed in both treatments in each experiment (Table 1). In Experiment 1, 27 primiparous sows had a farrowing rate of 89%. Farrowing rate and litter size were similar for both treatments. In Experiment 2, gilts had an overall farrowing rate of 94% and farrowed an average of 9.6 pigs. No treatment effects on either farrowing rate or litter size were detected in either experiment.

Since we began our studies, two research groups in the United Kingdom have failed to observe effects of postbreeding feed intake on fertility. However, one Canadian study found that high feed intake after breeding depressed embryo survival at d 25 of pregnancy. It appears that any negative effects of feeding

level are quite inconsistent compared to the advantages obtained by high feed intake (flushing) during the 2 weeks before breeding (Swine Day Reports of Progress, 1984 and

1987). Therefore, increased litter size may result from flushing, even in situations where feed intake cannot be reduced immediately after the female reaches estrus.

**Table 1. Fertility of Sows and Gilts Provided Different Amounts of Feed during the 10 Days after Breeding**

Feed/d, lb	No. of females	% farrowed	Litter traits	
			Total pigs farrowed (lb).	Live pigs farrowed (lb)
Experiment 1				
4	13	92 (12/13)	9.4 ± .6	9.1 ± .6 (24.5 ± 1.6) <sup>a</sup>
10	14	86 (12/14)	9.3 ± .6	9.2 ± .6 (26.6 ± 1.6)
Experiment 2				
4	39	92 (36/39)	9.4 ± .4 (26.7 ± 1.2) <sup>a</sup>	8.9 ± .4 (25.5 ± 1.3)
7.4	40	95 (38/40)	9.7 ± .4 (27.4 ± 1.1)	8.6 ± .4 (24.8 ± 1.3)

<sup>a</sup>Weight of the litter.



**Joe Carpenter, Swine Farm Manager, inspects the new computerized sow feeder.**